

FSA Modernization Partner

United States Department of Education

Federal Student Aid



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1 Introduction

1.1 Executive Summary

The *Technical Architecture Application Maintenance Report: June 2002 for FY 2002* summarizes the Integrated Technical Architecture (ITA) team's tasks related to resolving issues associated with the maintenance of FSA applications in production, for the specified month. The ITA provides a standardized, reusable infrastructure for enabling business capabilities within the FSA application community. The long-term vision of the ITA is to provide an integrated, enterprise-wide technical architecture that will enable FSA to reduce the number of custom-built applications that are difficult and costly to update and maintain.

2 FSA Applications Maintained by the ITA in Production

- FAFSA – the Free Application for Federal Student Aid on the web is an application used by college students and schools to submit financial applications via the Internet
- IFAP – Information for Financial Professionals web site is an electronic library for financial aid professionals containing publications, regulations, and guidance regarding the administration of Title IV Federal Student Aid Programs
- SFA Intranet – is an internal portal, for FSA employees, that provides general information about FSA, FSA Channels, and the Department of Education. The portal also houses information about FSA standards
- Schools Portal – is a homepage for Schools-specific information with links, headlines and calendar function frequented by the schools. The site is customizable and can store bookmarks
- eCampus Based – FSA initiated the Institution or Campus Based (CB) Modernization project. The intent of the project is to modernize the existing CB application architecture; migrating from the current platform (COBOL, IBM Mainframe, VSAM data store) to a relational database platform (Oracle), developing a web-based user interface (WebSphere), along with additional software functionality enhancements. This modernized solution is named eCB (electronic Campus Based). The main objective of the modernization effort is to offer institutions and CB staff an integrated and intuitive solution that increases access to information and self-service capabilities supporting FSA's strategic goals
- Financial Partners Data Mart – provides executive information and decision support capabilities around several key business functions for both the Guaranty Agencies (GAs) and the Lenders. The Data Mart initiative provides infrastructure within the channel and provides initial Risk Management, Customer Relationship Management, Compliance Management, and Portfolio Management functionality related to the thirty-six Guaranty Agencies and the approximately four thousand lenders



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- CFO Data Mart – provides reporting capabilities to the Chief Financial Office implementing MicroStrategy and Informatica
 - Exit Counseling – utilizes WebSphere and MQ Series to access NSLDS mainframe for specific information
 - Students.gov - an award-winning interagency portal sponsored by FSA that provides access to a wide range of public and private information and services targeted towards prospective and current post-secondary education students and their parents
 - Program Guidance – provides a central location for resources needed by the Program Development Division within FSA. The application provides documents and profiles to identify relevant information quickly for members of this division.
 - Students & Financial Partners Portals – were developed for the Students and Financial Partners channels to provide a central location for information needed by students and financial partners.

3 ITA Products

- IBM HTTP Server – web server
- IBM WebSphere – Java application server
- Network Dispatcher – cluster load balance and failover
- Interwoven – content management application
- Informatica – mainframe data tool that converts mainframe data for Oracle so reports can be generated by MicroStrategy
- Autonomy – search engine
- Viador / JRun – Viador is the product or application for the Schools Portal and JRun is the application server

4 Issue Matrix

The following matrix details the issues encountered by the ITA team from June 1, 2002 to June 28, 2002. The matrix is organized chronologically by application name and date to illustrate the team's progress in resolving the majority of issues and the instances in which the team directed its efforts to seek resolution for an issue. Subsequently, the matrix consists of the following categories: name of the application connected to an issue, description of the issue, steps taken by the ITA team to resolve an issue, the issue's level of priority ranging from high to medium to low, the issue's status whether new, in progress, or closed, and the issue's resolution date. Some issues span a greater time period and closure may not have been possible before the deadline of this report.



5 Issue Resolution Log

Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
June 5, 2002	All	Access to all applications in the SUN production environment was not available.	During the build of an application, a typographical error was made in the WebSphere configuration that altered the entire setup. The ITA team assisted in the troubleshooting and provided the resolution to the problem.	High	Closed	June 5, 2002
June 1, 2002 – June 28, 2002	FAFSA	WebSphere is recreating the table in the session database when it restarts under a heavy load. This issue has been observed three times in the production environment.	Tested IBM's temporary fix to the Session Creation problem. This fix does not allow WAS to drop the table since it already exists. The fix also prints extra debug messages that explains why WAS drops the session table. This fix is now installed on all WAS servers. Recreation of this problem has not been successful to identify why WebSphere was trying to recreate the table. Scenarios are still being investigated to determine root cause of this problem.	Medium	Ongoing	N/A
June 1, 2002 – June 28, 2002	FAFSA	ITA team was tasked with transitioning FAFSA Operations tasks to the VDC team. These tasks involve WebSphere maintenance and configuration as well as Network Dispatcher.	Ongoing meetings with CSC have been established to transition all tasks involved with FAFSA operations to their team. This task was finalized March 15, 2002. The ITA continues to support the CSC operations team when needed. The ITA team continues to support CSC personnel in the FAFSA production environment.	Low	Ongoing	N/A



Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
June 1, 2002 – June 28, 2002	FAFSA	Weekly FAFSA production calls have been scheduled to address issues.	The ITA team has continuously been represented at these meetings and ensures that issues are being resolved promptly.	Low	Ongoing	N/A
June 1, 2002 – June 28, 2002	FAFSA	Current FAFSA production contains excess number of servers to support the off-peak environment. The steady state configuration has been determined and a plan has been initiated to achieve that environment.	<p>The ITA team developed a proposal for an environment that would support FAFSA off-peak requirements. This configuration consisted of existing servers with a few excess servers. These extra servers are to be utilized for an HP performance test environment. The schedule has been agreed upon and change requests are pending to decommission servers in the production environment.</p> <p>The ITA team developed a process and worked with CSC and IBM to remove all of the requested servers from the production environment. There is one additional WebSphere server to be removed from the environment. Once that is complete, the four excess servers will be re-networked to the test network to provide a performance test environment for FAFSA 7.0. The servers still reside in production and are scheduled to be moved out in the beginning of July.</p>	Low	Ongoing	N/A



Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
June 1, 2002 – June 28, 2002	FAFSA	Web server processes are failing to respond to requests from I.H.S and causing a single CPU to peak at 100% utilization. The application is not impacted, but the server performance is skewed.	<p>This is an ongoing problem. IBM has recommended an upgrade to I.H.S, but this must be tested throughout each environment. As a temporary solution, the process that is hanging the CPU is ‘killed’ so that performance resumes normally. A schedule to upgrade the version of I.H.S will be presented. This upgrade must be executed and tested in each environment before it can be moved into production.</p> <p>There has been an error detected with the fix provided by IBM. We are currently working with IBM support to fix the installation.</p>	Low	Ongoing	N/A
June 1, 2002 – June 28, 2002	FAFSA	Operations have reported that the FAFSA WebSphere configuration takes some time to initialize if all Servers are rebooted together.	The WAS admin database was only setup for a maximum of 100 connections from the WAS cluster by the CSC admin. ITA has requested that this be increased to 500. These initial attempts to resolve this problem have not successful. The ITA team is currently working with IBM to try to recreate this problem outside of the production environment. A window in production will need to be established to test some scenarios. We are still working on a window.	Medium	Ongoing	N/A



Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
June 1, 2002 – June 28, 2002	FAFSA	FAFSA is experiencing periodic issues of clones hanging and not accepting connections from the web servers. This causes web servers to back up and eventually cause delays to users of FAFSA.	It was discovered that CSC implemented some Wily instrumentation two days before this problem began to occur. This included different drivers for FAFSA to access its datasources. The ITA spent several days on conference calls to troubleshoot and attempt to fix this issue. Wily has been backed out of the FAFSA environment to determine the root cause of this error. IBM, Wily, CSC, and ITA have worked together on resolving this issue. The next step is to change the FAFSA email configuration to utilize the local server instead of making a direct connection to the Dept of Ed email servers. This is scheduled for June 30.	High	Ongoing	N/A
June 1, 2002 – June 28, 2002	FAFSA	The FAFSA demo production environment needs to move in to a production system.	As a first step, we are moving the environment's databases to the production database server. We are also exploring possible final locations for this site.	Medium	Ongoing	N/A
June 1, 2002 – June 28, 2002	FAFSA	When the session database goes down for the FAFSA application, WebSphere sends an infinite number of requests to the database server to attempt updates to sessions and create new sessions.	IBM has provided an efix to limit the number of tries to connect to the session database to two before it stops trying. This efix is scheduled to be implemented in FAFSA development environment during the month of July.	Medium	Ongoing	N/A



Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
May 6, 2002	Schools Portal	The Schools Portal business owner has requested a cleanup of the production database for the Schools Portal to eliminate all unneeded user ID's.	<p>The Viador admin application was not functioning properly inside the VDC firewall. The ITA worked with Viador support to attempt to get the admin functionality to work correctly. Manual scripts were provided by Viador to delete user ID's from the database. This task was then transitioned to the application operations team.</p> <p>During the initial run a problem was encountered with Viador. A new plan must be established and executed to minimize impact to production application. The operations team is working with the business owner to determine plan of action.</p>	Low	Ongoing	N/A
June 17, 2002	Intranet	The FSANet application required the ability to push content to test server from Interwoven branch.	<p>The ITA team configured deployment to the test environment for required FSANet directories.</p> <p>Deployments are now successful.</p>	Medium	Closed	June 17, 2002
April 1, 2002	eCampus Based	Production eCB currently has a persistent session issue where session data was not available to both WebSphere nodes.	<p>The ITA team discovered that the eCB session cookie is not named properly. Tested fix within the performance environment.</p> <p>Fix has been implemented into the eCB production environment.</p>	Medium	Closed	June 2, 2002



Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
June 1, 2002	eCampus Based	The eCampus Based System project is slated to enter production the first weekend of June.	The final build and test will be the first week in June, from 6/1 – 6/6. Scripts and instructions we provided to complete this build.	Medium	Closed	June 2, 2002
June 25, 2002	eCampus Based	The eCampus Based System was experiencing email problems in the production environment.	The ITA team assisted CSC in troubleshooting the email problem and determining the resolution. There were problems with the WebSphere configuration and sendmail configuration on the server.	Medium	Closed	June 27, 2002
June 1, 2002 – June 26, 2002	Program Guidance	The Program Guidance project is being moved into production. There have been several delays within this move because of approvals and final work.	The final build of the production environment should be completed by the week ending on 5/31. The ITA team to complete the build of this environment provided scripts and directions.	Medium	Closed	June 20, 2002
June 24, 2002 – June 25, 2002	Program Guidance	The Program Guidance application was experiencing issues with the login and search features of the application.	The ITA team assisted CSC in the troubleshooting of this issue and determined the problem to be an Autonomy configuration issue and some missing files from the application. The correct configuration and files were provided to CSC to implement into the application.	Medium	Closed	June 27, 2002
June 24, 2002 – June 25, 2002	Program Guidance	The Program Guidance application requested the ability to deploy content to the production environment.	The ITA submitted a request to CSC to alter the production Interwoven configuration to allow future deployments for the Program Guidance application.	Low	Ongoing	N/A



6 WebSphere Upgrade

The following is a table outlining the upgrade to WebSphere from 3.5.3 to 3.5.5 in the SUN production environment.

Enhancements		
WebSphere upgrade to 3.5.5 scheduled for Mid July	WebSphere	In order to take of advantage of additional functionality, the ITA team is scheduling an upgrade to WebSphere in all SUN environments. This upgrade will take place over the month of June and will include all environments and applications. Communications will be sent out as each environment is upgraded and tested to validate all applications. This upgrade is scheduled to be completed by the middle of July.

7 Informatica Upgrade

The following is a table outlining the upgrade to Informatica from 1.7 to 5.1.2 in the SUN production environment.

Enhancements		
Upgrade to Informatica scheduled for Mid July	Informatica	In order to take of advantage of additional functionality and remain in a supported environment, the ITA team is scheduling an upgrade to Informatica. This upgrade will take place over the month of June into July and will include all environments and applications. Communications will be sent out as each environment is upgraded and tested to validate all applications. This upgrade is scheduled to be completed by the middle of July.



8 Solaris Upgrade

The following is a table outlining the upgrade to Solaris from 2.6 to 2.8 on all SUN servers.

Enhancements		
Solaris upgrade is scheduled to occur over next several months	Solaris	In order to take of advantage of additional functionality, the ITA team is scheduling an upgrade to Solaris on all SUN servers. This upgrade will take place over the next several months and will include all environments and applications. Communications will be sent out as each environment is upgraded and tested to validate all applications. A completion date will be provided once the project is further along.